81-IN5218 WARRIOR 5

WS5

REVISION DATE: 02-02-2009

MOOG Videolarm

PRODUCT INSTRUCTIONS

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CABLE AND POWER GUIDELINES

(Detailed info on Page 11)

This chart shows the proper current needed for power supplies for Warrior Series cameras. Use Class 2 Power only. Input voltage must be between 12-28 VDC or 15-28 VAC.

VOLTAGE	CURRENT	POWER
12 V DC	350m A	4.2W
24 VAC	202m A	4.8W

Depending on the voltage being used, refer to one of the formulas below to select the correct power supply for cameras connected in parallel (positive to positive, negative to negative):

Total current for a 12 V DC system:
TOTAL CURRENT = (350m A x total number of cameras)

Total current for a 24VAC system:
TOTAL CURRENT = (202m A x total number of cameras)

INSTALLATION PREPARATION

1. Determine the mounting location. Be sure that you'll be mounting to a secure wall or ceiling, next to a stud.

2. Complete all wire and conduit runs prior to installation of the housing.

INSTALLATION PROCEDURE

1. Cut a 4 3/4" x 4 3/4" square hole in the surface with one side against the stud (Figure 1). If necessary, use the template provided on the last page of these instructions.

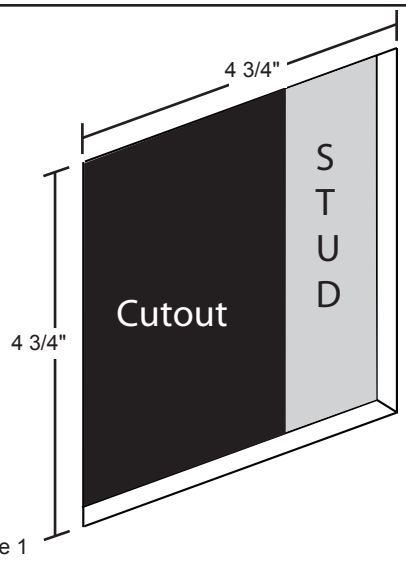

Figure 1

NOTE: The double-gang box must be flush with the drywall. Two sets of mounting holes are provided on the sides of the gang box. Use either to ensure that the box is flush with the drywall.

2. Using the security tool provided, loosen the (4) 8-32 security fasteners and remove the face plate (Figure 2).

Figure 2

3. Loosen the (2) 8-32 screws holding the top of the camera bracket and camera in place (Figure 3) and remove.

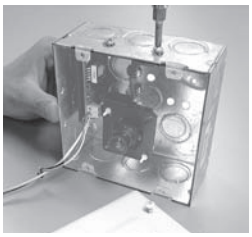

Figure 3

4. Position the double-gang box in the cutout against the stud and mark the location of the two mounting holes on the side. Remove the double-gang box.

5. Determine which side the conduit outlet will be located on: Top, bottom, left, right, or back. Remove the desired conduit knock-out.

CAUTION: TO PREVENT DAMAGE, THE CAMERA AND BRACKET MUST BE REMOVED BEFORE TAKING OUT THE CONDUIT KNOCKOUT.

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WIRING (Figure 4)

Use Class 2 Power only. Input voltage must be between 12-28 VDC or 15-28 VAC.

1. Connect the output of your Class 2 Power Supply to the terminal connectors on the PC Board inside the housing. Refer to the Troubleshooting section later in this instruction sheet for more information.

2. Connect the incoming video cable to the BNC connector.

   NOTE: For NVT Twisted Pair see Addendum 1.

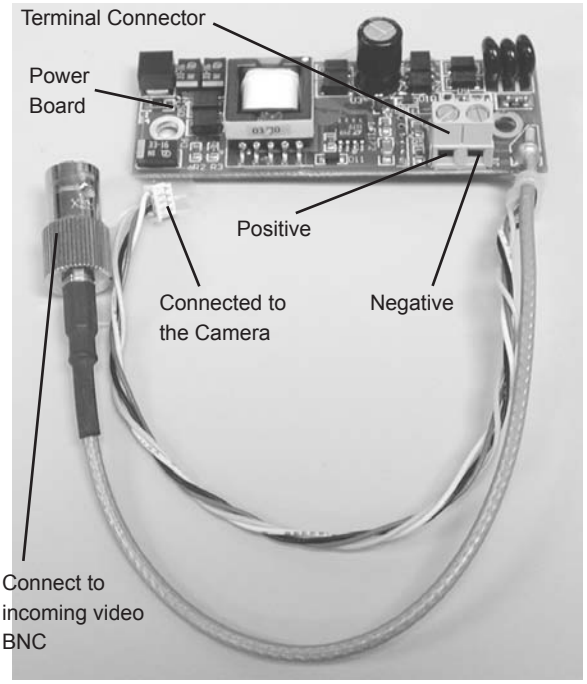


Figure 4

OPTIONAL WARRIOR TEST MONITOR CABLE (Part # - WSTMC)

DESCRIPTION

The Warrior Test Monitor Cable is a tool that allows users to view video from cameras via a small on-site monitor. It's quick and easy to use.

1. Using the security tool provided, loosen the four security fasteners and remove the housing top. **NOTE:** The housing top is held to the base by a lanyard.

2. Locate the power board on the inside of the housing. The Test Monitor Cable plug is located beside the terminal block where incoming power is connected (Figure 5).

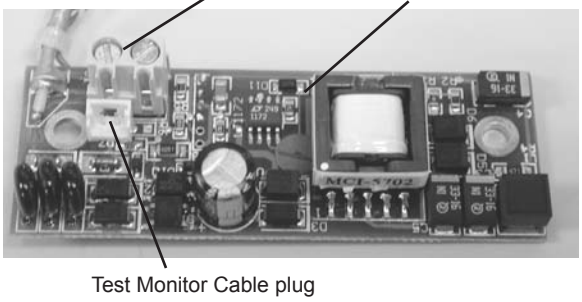
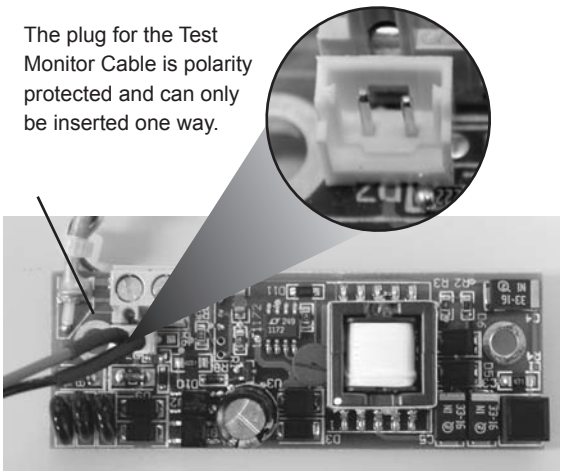


Figure 5

3. Plug the test monitor cable into the power board (Figure 6). Attach the BNC connector to your test monitor.



Test Monitor Cable (NOTE: Your cable may look different)

Figure 6

NOTE: The following instructions are for camera bracket setup, camera focusing, and camera set-up. The final steps for installation follow these sections.

CAMERA BRACKET SETUP

Reattach the camera bracket to the double-gang box using the (2) 8-32 screws. Check to determine if the position of the camera is correct. To adjust the bracket, loosen the (2) 8-32 adjustment screws (Figure 7). Use Loctite™ or an equivalent product to secure the screws, especially in installations where vibration is a concern.

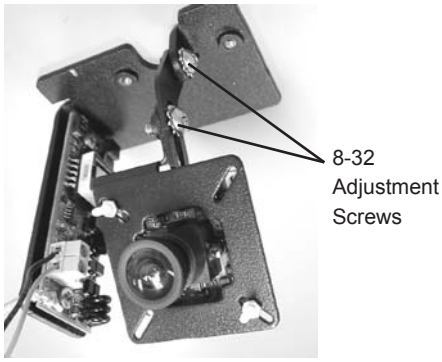


Figure 7

CAMERA FOCUSING (Figure 8)

1. The camera is factory equipped with a 3.6mm fixed lens. A 2.5mm lens is also provided. To remove the 3.6mm lens, loosen the set screw and unscrew the lens counter-clockwise.

2. Fine focusing of the lens: Loosen the set screw in the lens mount and manually rotate the lens until a clear picture is achieved. Once the focus is set, retighten the set screw.

Figure 8

CAMERA SETTINGS

NOTE: To determine which camera is used in your unit, locate the serial number on the inside of the housing. Match the two letter prefix with the corresponding instructions included here for adjustments.

SERIAL NUMBERS BEGINNING WITH YK

FIXED AND FIXED VARI-FOCAL LENSES. There are no user adjustable settings on these units (Figure 9).

BW Fixed and Vari-Focal

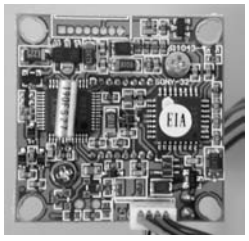


Figure 9

SERIAL NUMBERS BEGINNING WITH CT

FIXED AND FIXED VARI-FOCAL LENSES. There are no user adjustable settings on these units (Figure 14).

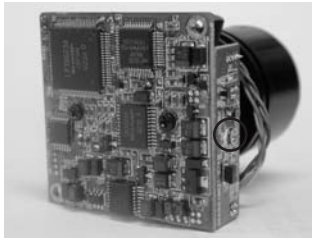


Figure 14

COMPLETION OF INSTALLATION

1. Once the proper viewing angle has been set, reattach the double-gang box to the stud using the (2) #10 x 1 1/2 mounting screws. Be sure that the hole cutout has clearance for the screws at the top outside surface of the gang box.

2. Reattach the front plate to the double-gang box and tightly fasten the (4) security screws using the security tool).

WINDOW GUARD™ PAINT SHIELD REPLACEMENT

Your Warrior 5 comes with a replaceable Window Guard™ paint shield to protect the front plate window from vandalism. If vandalism occurs (spray paint, scratches, etc.) you need only replace the shield, not the entire window. Additional shields can be ordered.

1. Remove the face plate.

2. On the inside of the face plate, remove the (6) 6-32 nuts and star washers holding the window in place (Figure 15).

3. Remove the damaged paint shield.

4. Place a new shield in front of the window. Reinstall the window, making sure to securely tighten the (6) nuts and star washers. Reinstall the face plate.

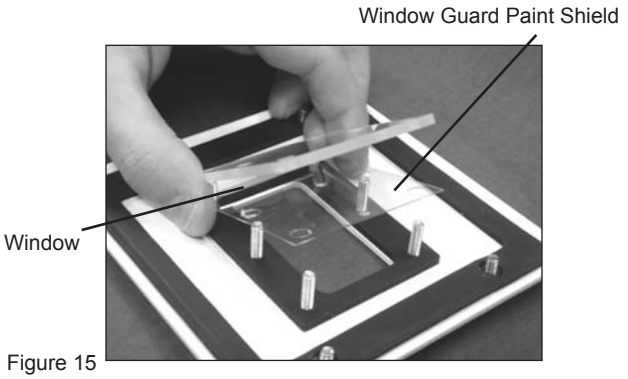


Figure 15

ADDENDUM 1

UNSHIELDED TWISTED PAIR VIDEO WIRING

NOTE: The customer must purchase the Video Transceiver from NVT. Part numbers are:
- NV-212A (500 ft.)
- * NV-213A or NV-213A-M (1000 ft.)
- NV-652R, NV-862R, or NV-1662R (3000 ft.)

The cameras included in the Warrior series are able to transmit video signals to NVT receivers via unshielded twisted pair cable. You must purchase the receiver separately. Instructions for connecting the receiver end of the unshielded twisted pair cable will be included with the NVT receiver. Following are instructions for connecting the unshielded twisted pair cable to the PC board inside your Warrior housing. See the TROUBLESHOOTING section in the back of these instructions if you experience any problems.

1. Connect the unshielded twisted pair cable to the positive and negative screw terminals on the Warrior PC board (Figure 16).

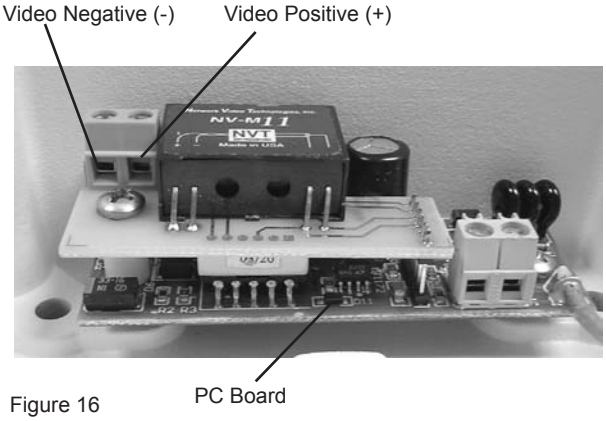


Figure 16

2. Connect the other end of the unshielded twisted pair cable to the NVT receiver.
   CAUTION: The unshielded twisted pair video signal is polarity dependent. The positive video terminal on the Warrior PC board MUST be connected to the positive terminal on the NVT receiver, and negative MUST be connected to negative.
3. When using unshielded twisted pair cable you DO NOT need the BNC connector. Be sure that there is no video connection other than the unshielded twisted pair cable.

Wiring Notes

Wire — What to **DO**

1. **DO** use point-to-point Unshielded Twisted Pair wire, gauge 24 or thicker, stranded or solid, Category 2, 3, 4, or 5.
2. The video signal may co-exist in the same wire bundle as other video, telephone, data, control signals, or low-voltage power. It is also OK to run NVT video signals in or near electromagnetic fields (in accordance with National Electrical Code, local, or other local safety requirements).
3. **DO** measure the wire distance. Use only transceivers that are designed for that distance.
4. **DO** make sure the pair of wires carrying the video signal is sent as a twisted pair (e.g. the blue-white/white-blue wires twisted together as a pair), not a “split-pair” (e.g. blue-white conductor, part of one pair/orange-white conductor, part of another pair).

Wire — What NOT to DO

1. **DO NOT USE SHIELDED TWISTED PAIR WIRE.** It will severely degrade the distance performance. Short runs may be used with some signal degradation (for example elevator traveler cables). Multi-pair wire with an overall shield is OK.
2. **DO NOT USE UN-TWISTED WIRE.** It will reduce the NVT product’s inherent interference immunity.
3. **DO NOT** allow your installation to have “bridge-taps”, loading coils, talk-battery, or MOV type protectors. Bridge-taps are where a twisted pair is connected to two twisted pairs (such as an extension phone at home). Bridge-taps cause reflections as the signal propagates, resulting in “ghosts” in the video image, and are to be avoided.
4. If the phone company is providing the cable runs between buildings, make sure it’s “dry copper” i.e. it should have none of the following: dial-tone, 48 volts, loading coils, bridge-taps, switching, or long paths to the phone company’s central office and back.
5. Due to near-end crosstalk, **DO NOT** send a transmit and a receive signal in the same wire bundle. Exceptions: Less than 1,000 ft (300m), or Category 5 cable, up to 2,000 ft (600m) are OK.
6. **DO NOT** send “Up-the-Coax” Pan/Tilt/Zoom signals through active (amplified) NVT transceivers.

7. For safety, never put NVT signals in the same conduit as high-voltage wiring.

8. **WARNING** — to reduce a risk of fire or electrical shock, do not expose this product to rain or moisture.

Measure your wire distance

Note: All NVT quoted distance specifications include any coax in the run. It is recommended that the wire distance be measured to ensure that the capability of the NVT product is correct.

Wire resistance may be measured with an ohm-meter by shorting the two conductors together at the far end, and measuring the loop-resistance out and back. Compare your readings with the charts on the next page.

Cable Distance	Unshielded Twisted-Pair Wire Gauge (AWG) 18	19	20	22	24
250 ft	3 Ω	4 Ω	5 Ω	8 Ω	13 Ω
300 ft	4 Ω	5 Ω	6 Ω	10 Ω	16 Ω
400 ft	5 Ω	6 Ω	8 Ω	13 Ω	21 Ω
500 ft	6 Ω	8 Ω	10 Ω	16 Ω	26 Ω
600 ft	8 Ω	10 Ω	12 Ω	19 Ω	31 Ω
800 ft	10 Ω	13 Ω	16 Ω	25 Ω	42 Ω
1000 ft	13 Ω	16 Ω	20 Ω	32 Ω	52 Ω
1250 ft	16 Ω	20 Ω	25 Ω	40 Ω	65 Ω
1500 ft	19 Ω	24 Ω	30 Ω	48 Ω	78 Ω
1750 ft	23 Ω	28 Ω	35 Ω	55 Ω	91 Ω
2000 ft	26 Ω	32 Ω	40 Ω	63 Ω	104 Ω
2500 ft	32 Ω	40 Ω	49 Ω	79 Ω	131 Ω
3000 ft	39 Ω	48 Ω	59 Ω	95 Ω	157 Ω
3500 ft	45 Ω	56 Ω	69 Ω	111 Ω	183 Ω
4000 ft	52 Ω	64 Ω	79 Ω	127 Ω	209 Ω
5000 ft	65 Ω	80 Ω	99 Ω	158 Ω	261 Ω
6000 ft	78 Ω	95 Ω	119 Ω	190 Ω	313 Ω
8000 ft	104 Ω	127 Ω	158 Ω	253 Ω	418 Ω

Cable Distance	Unshielded Twisted-Pair Wire Gauge (AWG) 18	19	20	22	24
75 m	3 Ω	4 Ω	5 Ω	8 Ω	13 Ω
100 m	4 Ω	5 Ω	6 Ω	10 Ω	17 Ω
125 m	5 Ω	7 Ω	8 Ω	13 Ω	21 Ω
150 m	6 Ω	8 Ω	10 Ω	16 Ω	26 Ω
200 m	9 Ω	10 Ω	13 Ω	21 Ω	34 Ω
300 m	13 Ω	16 Ω	19 Ω	31 Ω	51 Ω
400 m	17 Ω	21 Ω	26 Ω	42 Ω	69 Ω
500 m	21 Ω	26 Ω	32 Ω	52 Ω	86 Ω
600 m	26 Ω	31 Ω	39 Ω	62 Ω	103 Ω
750 m	32 Ω	39 Ω	49 Ω	78 Ω	129 Ω
900 m	38 Ω	47 Ω	58 Ω	94 Ω	154 Ω
1000 m	43 Ω	52 Ω	65 Ω	104 Ω	171 Ω
1200 m	51 Ω	63 Ω	78 Ω	125 Ω	206 Ω
1500 m	64 Ω	78 Ω	97 Ω	156 Ω	257 Ω
1800 m	77 Ω	94 Ω	117 Ω	187 Ω	309 Ω
2400 m	102 Ω	125 Ω	156 Ω	249 Ω	411 Ω

Cable Distance	Unshielded Twisted-Pair Wire Gauge (mm) 1.0	0.8	0.7	0.6	0.5
75 m	3	5	6	9	13 Ω
100 m	4	7	9	12	18 Ω
125 m	6	8	11	15	22 Ω
150 m	7	10	13	18	27 Ω
200 m	9	13	17	24	36 Ω
300 m	13	20	26	36	54 Ω
400 m	18	27	35	48	72 Ω
500 m	22	33	43	60	90 Ω
600 m	26	40	52	72	108 Ω
750 m	33	50	65	89	135 Ω
900 m	40	60	78	107	162 Ω
1000 m	44	66	86	119	179 Ω
1200 m	53	80	104	143	215 Ω
1500 m	66	100	130	179	269 Ω
1800 m	79	120	155	215	323 Ω
2400 m	106	159	207	286	431 Ω

IMPORTANT SAFEGUARDS

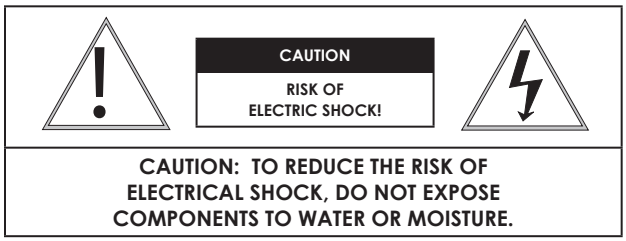
1. **Read Instructions** - All the safety and operating instructions should be read before the unit is operated.
2. **Retain Instructions** - The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** - All warnings on the unit and in the operating instructions should be adhered to.
4. **Follow Instructions** - All operating & user instructions should be followed.
5. **Electrical Connections** - Only a qualified electrician should make electrical connections.
6. **Attachments** - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. **Cable Runs** - All cable runs must be within permissible distance.
8. **Mounting** - This unit must be properly and securely mounted to a supporting structure capable of sustaining the weight of the unit. Accordingly:
   a. Installation should be made by a qualified installer.
   b. Installation should be in compliance with local codes.
   c. Care should be exercised to select suitable hardware to install the unit, taking into account both the composition of the mounting surface and the weight of the unit. Be sure to periodically examine the unit and the supporting structure to make sure that the integrity of the installation is intact. Failure to comply with the foregoing could result in the unit separating from the support structure and falling, with resultant damages or injury to anyone or anything struck by the falling unit.

UNPACKING

Unpack carefully. Electronic components can be damaged if improperly handled or dropped. If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper. ***Be sure to save:***

1. The shipping carton and packaging material. They are the safest material in which to make future shipments of the equipment.
2. These Installation and Operating Instructions.

SAFETY PRECAUTIONS



CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT EXPOSE COMPONENTS TO WATER OR MOISTURE.

The lightning flash with an arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SERVICE

If the unit ever needs repair service, customer should contact Videolarm (1-800-554-1124) for return authorization & shipping instructions.

TECHNICAL SUPPORT

Videolarm has set-up a 24 hour technical support line for their customers.

24 HOUR TECHNICAL SUPPORT

1-800-554-1124

LIMITED WARRANTY FOR VIDEOLARM INC. PRODUCTS

VIDEOLARM INC. *warrants this Product to be free from defects in material or workmanship, as follows:*

PRODUCT CATEGORY	PARTS	LABOR
All Enclosures and Electronics	Five (5) Years	Five (5) Years
Pan/Tilts	Three (3) Years **6 months if used in autoscan / tour operation	Three (3) Years **6 months if used in autoscan / tour operation
Poles/PoleEvators	Three (3) Years	Three (3) Years
Warrior/Q-View/I.R. Illuminators	Five (5) Years	Five (5) Years
SView Series	Five (5) Years **6 months if used in autoscan / tour operation	Five (5) Years **6 months if used in autoscan / tour operation
Controllers	Five (5) Years	Five (5) Years
Power Supplies	Five (5) Years	Five (5) Years
Accessory Brackets	Five (5) Years	Five (5) Years

During the labor warranty period, to repair the Product, Purchaser will either return the defective product, freight prepaid, or deliver it to Videolarm Inc. Decatur GA. The Product to be repaired is to be returned in either its original carton or a similar package affording an equal degree of protection with a RMA # (Return Materials Authorization number) displayed on the outer box or packing slip. To obtain a RMA# you must contact our Technical Support Team at 800.554.1124, extension 101. Videolarm will return the repaired Product freight prepaid to Purchaser. Videolarm is not obligated to provide Purchaser with a substitute unit during the warranty period or at any time. After the applicable warranty period, Purchaser must pay all labor and/or parts charges.

The limited warranty stated in these product instructions is subject to all of the following terms and conditions:

1. NOTIFICATION OF CLAIMS: WARRANTY SERVICE: If Purchaser believes that the Product is defective in material or workmanship, then written notice with an explanation of the claim shall be given promptly by Purchaser to Videolarm but all claims for warranty service must be made within the warranty period. If after investigation Videolarm determines that the reported problem was not covered by the warranty, Purchaser shall pay Videolarm for the cost of investigating the problem at its then prevailing per incident billable rate. No repair or replacement of any Product or part thereof shall extend the warranty period as to the entire Product. The specific warranty on the repaired part only shall be in effect for a period of ninety (90) days following the repair or replacement of that part or the remaining period of the Product parts warranty, whichever is greater.

2. EXCLUSIVE REMEDY: ACCEPTANCE: Purchaser's exclusive remedy and Videolarm's sole obligation is to supply (or pay for) all labor necessary to repair any Product found to be defective within the warranty period and to supply, at no extra charge, new or rebuilt replacements for defective parts.

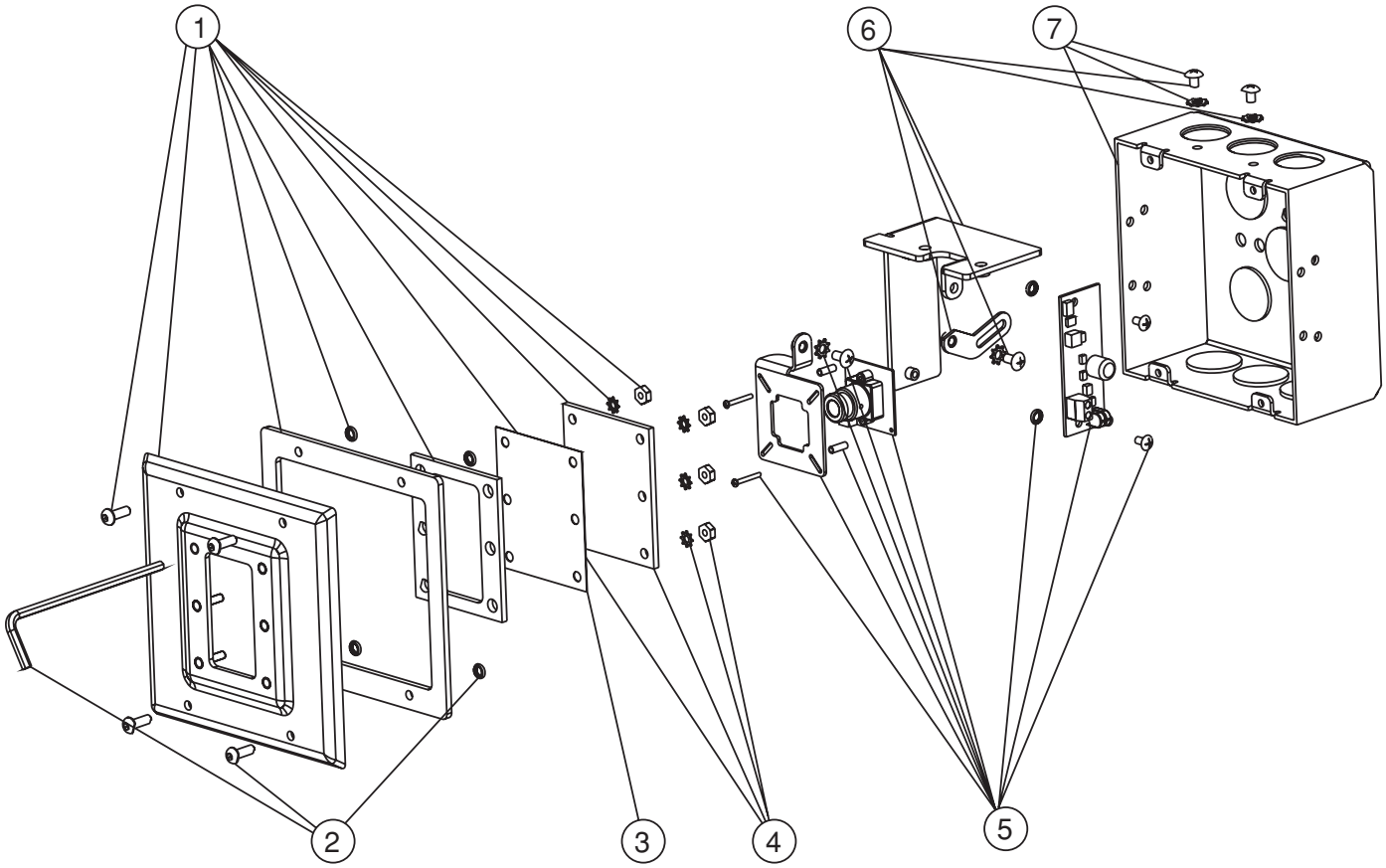
3. EXCEPTIONS TO LIMITED WARRANTY: Videolarm shall have no liability or obligation to Purchaser with respect to any Product requiring service during the warranty period which is subjected to any of the following: abuse, improper use: negligence, accident, lightning damage or other acts of God (i.e., hurricanes, earthquakes), modification, failure of the end-user to follow the directions outlined in the product instructions, failure of the end-user to follow the maintenance procedures recommended by the International Security Industry Organization, written in product instructions, or recommended in the service manual for the Product. Furthermore, Videolarm shall have no liability where a schedule is specified for regular replacement or maintenance or cleaning of certain parts (based on usage) and the end-user has failed to follow such schedule; attempted repair by non-qualified personnel; operation of the Product outside of the published environmental and electrical parameters, or if such Product's original identification (trademark, serial number) markings have been defaced, altered, or removed. Videolarm excludes from warranty coverage Products sold AS IS and/or WITH ALL FAULTS and excludes used Products which have not been sold by Videolarm to the Purchaser. All software and accompanying documentation furnished with, or as part of the Product is furnished "AS IS" (i.e., without any warranty of any kind), except where expressly provided otherwise in any documentation or license agreement furnished with the Product.

4. PROOF OF PURCHASE: The Purchaser's dated bill of sale must be retained as evidence of the date of purchase and to establish warranty eligibility.

DISCLAIMER OF WARRANTY EXCEPT FOR THE FOREGOING WARRANTIES, VIDEOLARM HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY AND/OR ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND/OR ANY WARRANTY WITH REGARD TO ANY CLAIM OF INFRINGEMENT THAT MAY BE PROVIDED IN SECTION 2-312(3) OF THE UNIFORM COMMERCIAL CODE AND/OR IN ANY OTHER COMPARABLE STATE STATUTE. VIDEOLARM HEREBY DISCLAIMS ANY REPRESENTATIONS OR WARRANTY THAT THE PRODUCT IS COMPATIBLE WITH ANY COMBINATION OF NON-VIDEOLARM PRODUCTS OR NON-VIDEOLARM RECOMMENDED PRODUCTS PURCHASER CHOOSES TO CONNECT TO PRODUCT.

LIMITATION OF LIABILITY THE LIABILITY OF VIDEOLARM, IF ANY, AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DAMAGES FOR ANY CLAIM OF ANY KIND WHATSOEVER, REGARDLESS OF THE LEGAL THEORY AND WHETHER ARISING IN TORT OR CONTRACT, SHALL NOT BE GREATER THAN THE ACTUAL PURCHASE PRICE OF THE PRODUCT WITH RESPECT TO WHICH SUCH CLAIM IS MADE. IN NO EVENT SHALL VIDEOLARM BE LIABLE TO PURCHASER FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION, REIMBURSEMENT OR DAMAGES ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS OR FOR ANY OTHER REASON WHATSOEVER.

WS5 -
Exploded Diagram and Replacement Parts List



	Part Number	Description
1	RPWS5010	WARRIOR 5 FRONT PLATE ASSEMBLY
2	RPWS5020	WARRIOR 5 FACE PLATE FASTENER KIT
3	WS5PS	WARRIOR 5 REPLACEMENT PAINT SHIELD
4	RPWS5040	WARRIOR 5 REPLACEMENT WINDOW KIT
		NTSC BOARD CAMERAS
5	RPWS5050	WARRIOR 5 STANDARD RES, BLACK & WHITE, FIXED CAMERA KIT
	RPWS5051	WARRIOR 5 STANDARD RES, COLOR, FIXED CAMERA KIT
	RPWS5052	WARRIOR 5 HI-RES, COLOR, FIXED CAMERA KIT
		PAL BOARD CAMERAS
	RPWS5050P	WARRIOR 5 PAL STANDARD RES, BLACK & WHITE, FIXED CAMERA KIT
	RPWS5051P	WARRIOR 5 PAL STANDARD RES, COLOR, FIXED CAMERA KIT
	RPWS5052P	WARRIOR 5 PAL HI-RES, COLOR, FIXED CAMERA KIT
6	RPWS5060	WARRIOR 5 BRACKET ASSEMBLY
7	RPWS5070	WARRIOR 5 DOUBLE GANG BOX ASSEMBLY KIT
		Not shown items
	RPWS5080	WARRIOR 5 PACKET KIT

TROUBLESHOOTING

If you experience problems with the camera picture please check these simple troubleshooting procedures for possible solutions before calling technical support.

STATIONARY OR SCROLLING HORIZONTAL LINES ON SCREEN

GROUND LOOPS

Generally a horizontal line on screen, whether moving or stationary, means you have a ground loop problem. The video shield should only be connected to ground through the monitor or other electronic equipment that uses the video signal. Connecting the video shield to ground at the camera will create a ground loop, which may interfere with the video signal (See Figure A). This should not damage the camera, but the video signal may become unusable. A ground loop problem will cause a dark horizontal bar to slowly “scroll" through the picture. To solve this problem, remove all ground connections from the video connection EXCEPT for the ground at the terminating end of the video signal.

The video termination should be a 75-ohm impedance, standard in monitors and other video equipment. If the video signal goes to more than one piece of equipment, a monitor and multiplexer input for instance, insure that one and only one piece of equipment terminates the video signal with 75 ohms; otherwise the image will be degraded and may appear to be unusually dim.

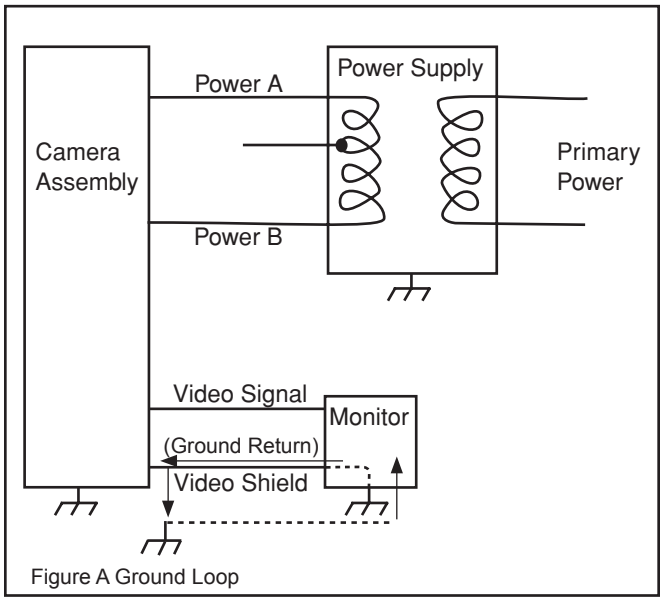


Figure A Ground Loop

IMPORTANT NOTE: If you have removed the ground loop and the horizontal line still remains on screen call Videolarm technical support for further information.

AUTOMATIC BROWN OUT FEATURE

The camera includes an automatic brown out feature which is activated whenever the incoming voltage drops below 10 VAC or VDC.

LINE LOCK

All cameras are all shipped from the factory with the line lock function disabled. If your application requires Line Lock contact Videolarm.

NVT TROUBLESHOOTING

If you are experiencing problems, attempt to simplify your setup. Test each cable segment separately. For example, test the camera and monitor together without the other equipment. Then add in the NVT transceivers, back-to-back. Test each segment of a long cable-run independently. Attempt to isolate the problem.

Below are problems that may be encountered. If the suggestions below are not helpful, or the recommendations are not effective, please call NVT’s customer support. NVT customer support can be reached 8:00 AM to 5:30 PM PST at (800) 959-9870 or at (+1) (650) 562-0600.

FAINT OR BLURRY PICTURE; LITTLE OR NO COLOR

Possible causes include:

1. Shielded twisted-pair cable. Verify that the wire is unshielded twisted-pair cable. Multi-pair cable with an overall shield is OK.
2. Longer wire distance than expected. Be sure to include any coax cable that’s part of this distance. Verify end-to-end connectivity with an ohm meter. Measure the distance by disconnecting the transceivers, shorting the far end, reading the loop’s resistance at the near end. See above for ohm vs. distance ratings. If necessary, replace transceivers with correct models specified for this distance.
3. Incorrect distance equalization setting. Adjust the equalization controls) with a mini screwdriver (NV-652R, NV-862R or the NV-1662R). If the transmitter is an NV-653T, verify correct equalization switch setting.
4. Poor connection at a punch-block, splice, or coax cable. Re-check using the method described in #2 above, or use a wire test set.
5. Short between conductors of the twisted-pair. Use an ohm meter to locate the short.
6. Transient protection devices employing metal-oxide varistors. Use carbon blocks, gas-discharge tubes, or NVT transceivers with built-in protection.
7. Check the camera. Are the focus and iris set correctly? Verify with portable monitor.

EXTREMELY FAINT PICTURE

Only faint shadows of the original picture are visible. One of the twisted pair conductors is open or the wires are shorted together. Check with an ohm meter.

OVER-SATURATED COLORS; HIGH CONTRAST GRAINY PICTURE; TOO BRIGHT, TORN PICTURE

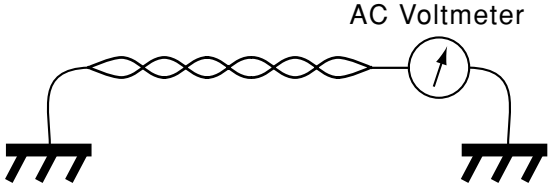
Adjust the distance equalization as necessary. Verify that the monitor has a 75 termination, not in “loop-through”.

WON'T SYNC; WIDE, WHITE JAGGED AREAS

Looks like a scrambled Cable TV signal. Check polarity.

WON'T SYNC; TORN PICTURE

1. Make sure that you are using unshielded twisted pair wire.
2. Check distance equalization settings.
3. For installations with passive (non-amplified) transceivers at both ends, check for ground loops. This may be done with an AC Voltmeter, as shown below:



If the voltage is greater than 1/2 volt, use an amplified receiver, such as the NV-652R, NV-862R, or NV-1662R.

Alternately, remove the ground at one end (usually at the camera end). Be sure that floating the camera conforms to local/regional and National Electrical Codes.

4. Check for crosstalk from a second video path. Disconnect all other video sources. If the problem goes away, check for a split-pair or un-twisted wire.

FAINT STRIPES GLIDING UP OR DOWN THE SCREEN

These are caused by crosstalk from a second video path, or with ground-loops in installations employing passive models at both ends.

1. To identify, disconnect all other video signals temporarily. If the interference goes away, check the wire to make sure the signal is traveling through a twisted pair. Is two-way video being sent more than 1,000 ft (300m) over Category 2 or 3 wire? If so, the send and receive signals may need to go in separate jacketed cables, or upgrade to Category 5 wire.
2. Next, check for ground loops. See #3 above.

NO POWER LIGHT ON THE NVT UNIT

Check the blue “power” LED on powered NVT units. If the light is not on, the receiver is not getting power. Re-check the power source and connections.

If the green LED is on but the power LED is off, check that the power supply is floating. Grounding one side of the power input may cause this condition.

NO GREEN LIGHT, NO VIDEO

The NV-652R, NV-862R or NV-1662R series receiver/hub is not detecting a video signal. There is an open or shorted connection. Use a multimeter to locate the fault.

GHOSTS

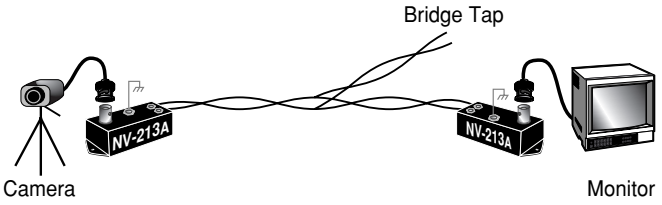
Faint shadows of the original signal shifted to the right. This is caused by an impedance mismatch along the wire. Verify that the monitor is terminated with 75 (not in “loop-through”.) Check that all wire is **unshielded** twisted pair. The high-frequency wire impedance should be 100. Check for bridge-taps (see below) either by inspecting wiring closet connections, or, if available, using a “Time-Domain Reflectometer” (T.D.R.), sometimes called a “cable tester”.

If the faint shadows are not copies of the original picture, but from the picture of some other camera, check for crosstalk:

Is any portion of the wire un-twisted?

Are the signals from two cameras split between two pairs?

Is there a short between a conductor of one signal and a conductor of another?



CABLE AND POWER GUIDELINES

This chart shows the proper current needed for power supplies for Warrior Series cameras. Use Class 2 Power only. Input voltage must be between 12-28 VDC or 15-28 VAC

VOLTAGE	CURRENT	POWER
12 VDC	350mA	4.2W
24 VAC	202mA	4.8W

Depending on the voltage being used, refer to one of the formulas below to select the correct power supply for cameras connected in parallel (positive to positive, negative to negative):

Total current for a 12 VDC system:
TOTAL CURRENT = (350mA x total number of cameras) Example: 350mA x 5 total cameras = 1750mA

Total current for a 24 VAC system:
TOTAL CURRENT = (202mA x total number of cameras) Example: 202mA x 5 total cameras = 1010mA

NOTE: If you're using a 12 VDC power supply and experience problems check the voltage at the camera's power input. This voltage should not
be less than 11 VDC. If you're measuring less than 11 VDC you'll need to use a power supply with a higher current rating.

Power Supply Cable Maximum Length (feet/meters)

Total Load	Power Supply	24 AWG	22 AWG	18 AWG	16 AWG
4.2W	12 VDC	55/16	88/26	223/67	355/108
4.8W	24 VAC	867/264	1380/420	3488/1063	5547/1690

NOTE: The above table is based on a "worst-case" power supply. Using a regulated or switching power supply can increase your cable distance. A CSA/UL listed Class 2 power supply must be used. Videolarm recommends its PS12 12 VDC 1000mA power supply for 12 VDC appl,ications

Video Cable Maximum Length (feet/meters)

Cable Type	RG-59	RG-6	RG-11
Wire Gauge	23 AWG*	18 AWG*	16 AWG*
Max. Length	750/229	1500/457	1800/549

** Copper clad steel core, 95% braided shield*

Maximum Length (feet/meters)

AWG	250/76	500/152	1000/305	1500/457	2000/610	3000/914
18	3Ω	6Ω	13Ω	19Ω	26Ω	40Ω
20	5Ω	10Ω	20Ω	30Ω	40Ω	59Ω
22	8Ω	17Ω	33Ω	48Ω	66Ω	99Ω
24	13Ω	26Ω	52Ω	78Ω	108Ω	163Ω

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Product Registration/Warranty

Thank you for choosing Videolarm. We value your patronage and are solely committed to providing you with only the highest quality products available with unmatched customer service levels that are second-to-none in the security industry.

Should a problem arise, rest assure that Videolarm stands behind its products by offering some of the most impressive warranty plans available: ***3 Years*** on all Housings, Poles, Power Supples, and Accessories and ***5 Years*** on all camera systems (SView, QView, Warriors), and InfraRed Illuminators.

Register Your Products

Option 1: Online *Option 2:* Mail-In

Take a few moments and validate your purchase with our **Online Product Registration Form** at ***www.videolarm.com/productregistration.jsp*** or complete and mail-in the bottom portion of this flyer.

Register your recent Videolarm purchases and benefit from the following:

- Simple and Trouble-Free RMA process
- Added into customer database to receive product updates / news
- Eliminate the need to archive original purchase documents: Receipts, Purchase Orders, etc…

Cut at the dotted Line

Place in envelope, affix stamp and mail to: ***Videolarm ATTN: Warranty***
2525 Park Central Ave.
Decatur, GA 30035

Main Contact Info

First Name: _____ Last Name: _____

Professional Title: _____ Company: _____

Address 1: _____ Address 2: _____

City: _____ State / Province/Country: _____

Zip / Postal Code: _____ Phone Number: _____ E-mail Address: _____

Product Information

Please Circle One: Business Personal

Name & Location of Company / Store where Purchased: _____
(City, State, Country)

Videolarm Product ID _____ Product Description _____

Serial # _____
(Available only for Camera Systems, IR Illuminators, Wireless Devices)

PO# _____